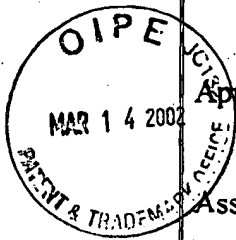# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Michael F. Braitberg, Steven B. Volk, Gregory D. Volan, Ian R. Redmond
Assignee:	SpinVision, Inc.
Title:	Removable Optical Storage Device And System
Serial No.:	09/753,109
Examiner:	David D. Davis
Docket No.:	M-8534-2D US

Filing Date: December 29, 2000

Group Art Unit: 2652

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Technology Center 2600

Boulder, Colorado

DECLARATION OF THOMAS E. BERG

I, Thomas E. Berg, declare as follows:

1. I am the inventor of U.S. Patent No. 5,132,944 ("the '944 patent"), which has been cited as prior art in the above-referenced patent application ("this application").

2. I hold a bachelor's degree and a master's degree in mechanical engineering and have been employed in the field of optical recording for 17 years. I am the inventor of seven United States patents in the optical recording field. The invention of the '944 patent was made while I was employed at Optotech in Colorado Springs, Colorado, which was later acquired by Hewlett-Packard Company, the assignee of the '944 patent. I am currently employed by DataPlay, Inc. (formerly SpinVision, Inc.), the assignee of this application.

3. I am familiar with this application and understand that the '944 patent has been cited under 35 U.S.C. 103(a) against Claims 50, 75 and 95 of the application, which, as amended, read as follows (emphasis added):

"50. A drive, as claimed in claim 44, wherein said drive fits within *a rectangular envelope having a thickness less than or equal to about 12 mm.*"

"75. Apparatus for optical data storage comprising:

*   *   *

an optics arm having at least a laser source, a detector, an objective and a focus actuator,

*   *   *

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wherein the location and mass of components of said arm are such that said rotation about said second axis imparts *a moment of inertia of less than or equal to about 5 gm-cm^2.*"

"95.   A drive for reading or writing data from or to an optical data recording disk, said drive having *a thickness less than or equal to about 12 mm, a width less than or equal to about 55 mm and a depth less than or equal to about 40 mm.*"

4.   In my opinion, it would not have been obvious to a person of average skill in the art at the time this application was filed how to construct a device meeting the limitations of Claims 50, 75 and 95, respectively. Without intending to be limited, my opinion is supported by at least the following circumstances:

(a)   In designing the invention of the '944 patent, I was working in the field of magneto-optic disk drives. Magneto-optic disk drives require a relatively high power laser (e.g., 40 mW) as well as a distributed optics system to provide a heat sink for the laser. An optics arm containing these elements would typically have a relatively large mass and a corresponding moment of inertia far greater than 5 gm-cm^2, as recited in Claim 75.

(b)   The media I was working with in connection with the '944 patent was substrate-incident, meaning that the laser beam passes through the substrate before reaching the magneto-optic recording layer. This requires that the laser beam have a relatively long focal length and effectively precludes the construction of a drive having a thickness less than or equal to about 12 mm, as recited in Claims 50 and 95, respectively.

(c)   The use of a substrate-incident media also requires that the laser beam strike the media at a normal (i.e., 90°) angle of incidence. This requirement precludes focusing the beam by tilting the optics arm in a vertical direction, as described at page 26, lines 1-4, of this application. Tilt-focusing allows the mass and moment of inertia of the optics arm to be less, as compared with systems wherein the focusing mechanism is included within the optics arm. The use of tilt focusing is one factor that allows the moment of inertia of the optics arm to be less than 5 gm-cm^2, as recited in Claim 75.

(d)   Moreover, the normal beam incidence argued in favor of using infinite-conjugate optics and necessarily larger beam diameters. This was another factor that precluded me from achieving the thickness dimension recited in Claims 50 and 95.

5.   The '944 patent was filed on August 31, 1989. At that time I recognized that it was generally desirable to reduce the mass and moment of inertia of the optics arm and the size of the disk drive, but techniques for actually achieving the parameters recited in Claims 50, 75 and 95 were not known.

6.   While there were developments in the art of optical disk drives between August 31, 1989 and the filing date of this application, in my opinion those developments did not advance the state of the art to the point where the inventions recited in Claims 50, 75 and 95 would have been obvious to a person of average skill in the art at the time this application was filed.

I declare that all statements made herein of my own knowledge are true, all statements made herein on information and belief are believed to be true, and all statements made herein are made with the knowledge that whoever, in any matter within the jurisdiction of the Patent and Trademark Office, knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statement or entry, shall be subject to the penalties including fine or imprisonment or both as set forth under 18 U.S.C. 1001, and that violations of this paragraph may jeopardize the validity of the application or this document, or the validity or enforceability of any patent, trademark registration, or certificate resulting therefrom.

Thomas E. Berg

Signature: _Thomas E. Berg_

Dated: ___03/08/2002___